

BearingPoint®

Destination 2030: where every journey will be personalized



• What happens • when every journey is a personalized experience?

We believe global mobility trends will be fundamentally and permanently changed by how consumers make their mobility decisions.

The future will be based on a much greater degree of choice of modes, services and vehicle providers. Ultimately there is a clear convergence towards consumers being able to select from three core, but overlapping, experiences: mass transit, private vehicle and personal wellbeing. These will be provided by an ecosystem of public and private sector stakeholders working in new ways to provide an increasingly integrated end-to-end service.

In the first of three papers we examine **Mobility 2030: What happens when every journey is a personalized experience**. Where the future is completely personalized across multiple modes with individuals choosing how, what and when to travel. We see a future where customers simply log on with a user ID, and find much the same functionality as a mobile phone. The mobility experience will be personalized to deliver the ultimate efficient travel experience: choosing the right sequence of transport modes, in the most convenient vehicles, with built in congestion-avoidance and personalized entertainment, as quickly and cost-effectively as possible.

• Based on our proprietary research we believe there are three main changes to mobility in the future •



1
Every journey will become
a personalized experience



2
Climate neutrality will
be non-negotiable –
from cradle to grave



3
Users will consume
services rather than
own vehicles

The key is how current players, ecosystems and potential new entrants respond to:

1. “What happens when every journey is a personalized experience”
2. “What happens when climate neutrality is non-negotiable – from cradle to grave”
3. “What happens when users consume services rather than own vehicles”

● So what does this mean for sectors, incumbents and new players? ●

We believe this will change the priorities for all stakeholders in the mobility ecosystem, impacting current sectors and players while creating new business models.

We share our sector leaders' opinions in their area based on our proprietary data, client conversations and practical project experiences.

The paper outlines five sector views from our industry experts. They reveal key themes that impact stakeholders in every sector in the economy. While we focus on automotive industry, manufacturers, transportation providers, energy suppliers, government organizations and insurance companies, all sectors are active actors in the mobility ecosystem. How to competitively respond to this new mobility paradigm is high on everyone's strategic agendas.

● We see these three core issues that all players in all markets will need to address. ●

1. Manage the new mobility ecosystem, which is complex, demanding – but ultimately rewarding.

Each player will need to prepare for demanding intricacy of new infrastructure, alliance-ecosystem relationship and deliver multimodal journeys, as well as navigating the coexistence of diverse powertrains.

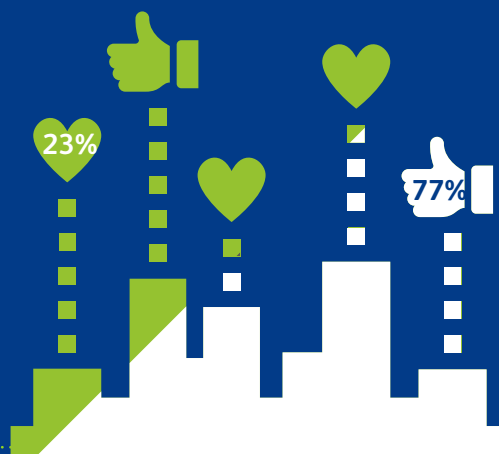
2. The battle for customer and value chain data is more important than ever!

Mobility will be consumed as a service so access to data will be key. On-demand services means all players will compete to acquire, analyze and exploit customer data so they can react to changing travel patterns.

3. Service offering will need to address National, Urban and Rural demand patterns.

The various modes of travel must be carefully integrated to enable urban and rural intermodal transport hubs. Customers will demand mobility policies that maximize security, personal wellbeing and sustainability, and risk profiles will diverge for different usage and regions.

By 2030, we project that about 23% of all megacity trips will happen through shared, on-demand mobility offerings (up from just 8% in 2021).



Source : BearingPoint survey and analysis

Table of contents

Introduction 2

Automotive and Manufacturing: the rise of human-centric mobility 5

Public Sector: citizens' future demand for mobility services 10

Insurance: change of business priorities 15

Utilities and Transport: preparation for a new role to play 20

Oil and Gas: new worlds of clean fuel and autonomous driving 25

Conclusion: the unstoppable rise of personalized mobility 30

All current options will converge on these three braid forms of personal mobility

- 1. A mass transit experience** – typically provided as a public service at lower or zero cost for the core service provision. This will be in a shared personal space with other travellers, with dedicated space on the physical infrastructure and offering moderate levels of personalisation, no choice of vehicle, and operating in an environment where everyone has a similar objective. This system will incorporate multiple modes, with moderate integration across one or more platforms, in a less direct routing between destinations.
- 2. A private vehicle experience** – that most will consume rather than own, with a level of vehicle choice, premium pricing for additional levels of service/brand/vehicle, moderate to higher cost, more direct, single mode, operating/competing on infrastructure with other users who have different objectives/destinations, and with very high levels of personalization available.
- 3. A personal wellbeing experience** – with zero environment impact, provided on dedicated infrastructure, ability to connect with others in person, analytics and connections with wellbeing devices, used as 'last mile' or intermodal connectivity within a mass transit experience, combined with other in-person services – food/ beverages, visits to physical sites/attractions, promoted for in-country tourism and recreational aspects over point-to-point destination-driven demand.

Automotive industry players need to prepare for the rise of personalized mobility.

By Dr. Stefan Penthin, Partner, Global Leader Automotive & Industrial Manufacturing, BearingPoint

Consumers will enjoy an array of new opportunities to personalize their mobility experience in the journey to 2030. They will be able to conveniently choose when and how to travel, selecting from options that include on-demand mobility services, new means of micro-mobility (especially micro-vehicles), and premium or mass market modes.

Automotive industry players must respond quickly to the increasing need for human-centric mobility, to stay ahead of the competition and retain their strategic position as the prime touchpoint to the customer. They need to action these three interrelated activities:

1. From persona to personalized

Automotive players will need to provide customers with truly personalized offerings consisting of a combination of both products and services, instead of providing anonymous mass market vehicles to broad customer segments.

2. From data desert to oasis of insights

Automotive OEMs and suppliers will need to go beyond opportunistic data collection towards strategic data orchestration, and derive actionable insights to gain competitive advantages along the entire customer journey.

3. From soloist to orchestra conductor

Tomorrow's leading automotive players will need to take an active role in orchestrating an ecosystem of partners, and rapidly embrace new technologies.



From persona to personalized

OEMs need to respond to customers who will demand a truly personalized combination of products and services.

We believe by 2030 there will be a wide variety of competing transportation modes, each with its own different purpose. Consumers will have the choice of different vehicles for long or short distances, urban or rural, premium or mass market – as well as enjoying advances in self-driving vehicles & robo-taxis. Heterogeneous ownership models will co-exist, enabling customers to choose between mobility subscriptions or flat rate payments, as well as premium ownership.

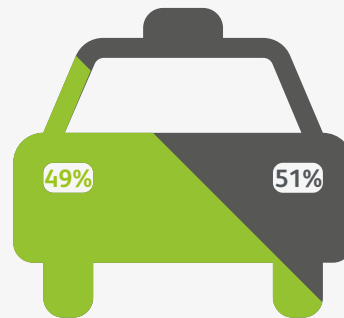
It is this diversity that will disrupt the existing industry. The demand for individualized transport will drive the need for platforms to orchestrate end-to-end, real-time travel. We therefore see large software service providers entering the mass market to provide this solution. This in turn will lead to business-to-business (B2B) dominating, as these platforms will purchase car fleets from OEMs and so control a large share of the passenger vehicle fleet that provides customized service.

This will also radically impact the relationship between OEMs and customers. It will no longer be via personalized sale and aftersales experience, but will be forced to play in the third party-dominated fleet market. Therefore OEMs will find themselves in severe danger of losing their traditional direct contact with the customer, which will make it more difficult to differentiate their offering.

Another difficulty for manufacturers will be the limited scaling possibilities. This will be due to the increase of complexity and diversity of production cycles linked to the heterogeneous vehicle landscape. This means lower economies of scale, which in turn will impact the profit margins as personal transportation becomes individualized.



Half of the survey participants (49%) say that they would sacrifice vehicle ownership to reduce their environmental footprint by 2030.



Source : BearingPoint survey and analysis

However we do believe vehicle manufacturers can win in the future if they act now. We believe the players that fully understand a customer’s needs and provide them with tailored mobility services will keep that customer. As most mobility choices will be consumed as a personalized service, the main differentiation will not be via the core vehicle itself (hardware) but by the extended possibilities in the sales and after sales proposition.

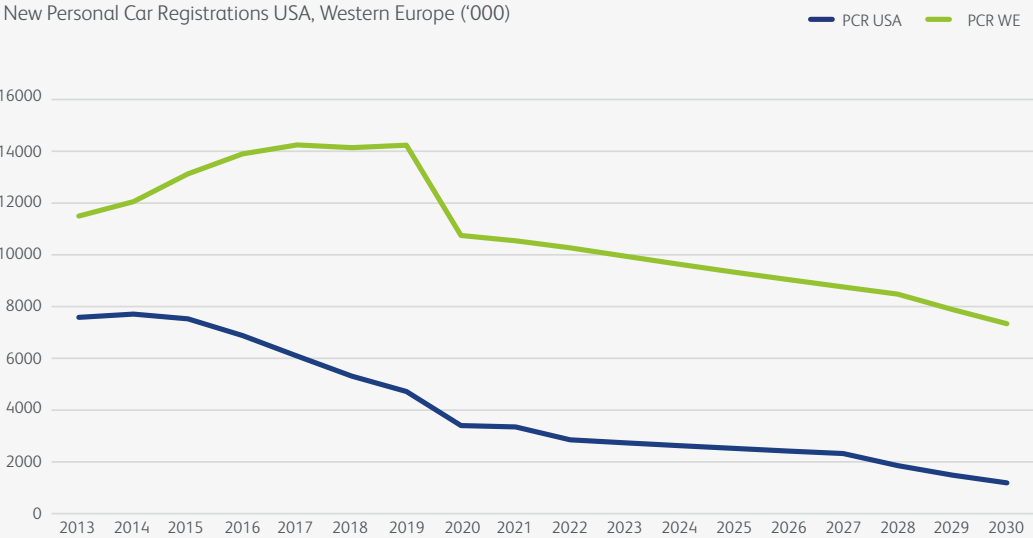
OEMs need to own this individualized experience and embrace the challenge of the platform. This means changing. OEMs must protect and monetize the USP of the vehicle. Their point of differentiation is the in-car experience and all services related to the core vehicle. Therefore, they must be the gatekeeper of the car just like Apple is in its Apple Store or Amazon in the Amazon marketplace. This means building a meaningful relationship with the customer that goes beyond the vehicle sale. They must remain relevant over the life of the vehicle and extend their area of influence. As there is a greater demand for customization there is also a greater opportunity to interact with the customer, whether it is bespoke production, sales touch points, in transit, or aftersales touchpoints and updates.

This means OEMs and their suppliers will have to rework how vehicles are produced and how they bundle services. Customization will require complex supply chain management. During manufacture, OEMs will have to show greater flexibility and deal with lower-volume production cycles, as well as allowing multiple items to be produced on the same line and adopting short ramp-up times. They will have to respond to evolving customer expectations by building hardware that could be customized late in production stages, or even after initial sales like post-sales changing of interior or vehicle color. OEMs will have to complement changes in manufacturing with improving their ownership of the driving experience, often in alliance with others. Therefore they will need to ‘own’ the provision of customer non-car related features and services, such as entertainment, autonomous mode to work and other software updates. The key is that OEMs must embrace the individual customer with a differentiated service in detail and not just provide hardware to a broad cluster of potential buyers.



New personal car registrations are falling in the USA and Western Europe – we anticipate that this will continue and that the rest of the world will eventually follow.*

*Source: EIU and BearingPoint analysis



● From data desert to oasis of insights

Automotive OEMs and suppliers will need to capture customer data to derive actionable insights.

In 2030, everything will be connected in the transport market. The customer will be connected to the vehicle, the vehicle with infrastructure and so back to the customer in a continuous loop. Owning data will therefore be the key to success for mobility providers of the future. We believe that all players will try and protect their data as this will be a key point of differentiation. However, the key dilemma will be that no single enterprise can deliver the future end-to-end customer mobility demand without sharing at least some data. Maintaining the balance and leveraging the sweet spot will be key.

We believe that those who master data efficiently to drive the real personalization will dominate. Mobility players will have to invest in the technology to process mass data in real time to provide the traveler with their customized service. This data will enable the owner to recommend options to the customer that matches their immediate needs, for example the optimum routes, modes and pricing for their journey. They will also be linking data from the hardware (e.g. sensors) to data coming from other sources (such as individual insurance rates depending on driving style, or personalized driving recommendations based on real-time data including weather, street conditions, or even obstacles behind the next curve). Data privacy, cyber security and changing regulations will still have to be managed to prevent reputational risk. But we believe the platform providers will be in pole position as they merge all the data of affiliated providers.

We believe that for OEMs to compete, they will need to become data gatherers. They will also gather and utilize data to provide a personalized service above and beyond the offering from the platform providers. They will need to get access beyond their own controlled touchpoints to map all customers' data. This will mean re-organizing themselves to mine data from all customer interactions, and will require centralizing sales and after sales insights. OEMs will need to leverage the data provided by the life cycle of product interactions with the customer, found for example during hardware and software updates, after-sales touchpoints, and during the normal usage of the car. Combined with their own customer data, they will also need to leverage vehicle data by scraping bulk anonymous data from traffic flows from multiple modes of transport. This data capture will ensure that an increasing share of revenues in future will come from services instead of product sales. So it is key to turn data into meaningful and differentiating individualized services to the end customer. While the creation of a broader ecosystem will be required for this to work, to preserve and monetize their data position, OEMs will need to control access to their vehicles' and customers' data.

● From soloist to orchestra conductor

Automotive firms will need to be active in new ecosystems and innovative technologies.

We believe new technologies will radically change everyday personalized mobility by 2030. Innovation will drive the speed of transformation, encourage new entrants and require providers to operate in a wider ecosystem to deliver personalized services to the customer. There will be an increase in competition, new entrants and growth of complex new segments such as purpose-tailored offerings like flying taxis in open country or urban areas. Changes in technologies will drive wider mobility personalization, including increase in varieties of power trains, more EVs, and engines that enable intelligent driving recommendations. As we have stated previously, the full portfolio of offerings cannot be delivered by a single firm but only by a wide variety of differentiated players with different skills and competences. We believe the enterprises that can be at the center of these new technological ecosystems will be the new mobility masters.

OEMs and suppliers will need to focus on building strong partnership with complementary players. This means strong integration into the ecosystem. OEMs will need to continue to be focused on innovation scouting, scanning for M&A opportunities, vertical and horizon strategic collaboration and joint ventures. This in turn means they will need to invest in rapid integration approaches. For example, they will need to ensure that they capture customers with brand-enhancing experiences that include offerings from other players. This will obviously mean utilizing partners from their ecosystem. Success will be based on sharing the customer without giving up the full client contact. The specialized player gets access to a relevant customer base and the OEM access to technology/products etc. Therefore market scouting and innovation integration is key in developing new skills to embrace the fast-moving market, while protecting their own USP of providing the in-vehicle driving experience.

Embrace the changing landscape!

We believe that OEMs and suppliers can be big players in the future. They will, however, have to create new services, utilizing data to build ecosystems that deliver the multimodal journeys of the future. The key for OEMs will be their ability to leverage their point of differentiation to compete with platform competitors. To do this, they must be able to gather and use data to personalize both software and hardware. They will also need to collaborate with partners to meet their customers' increasingly sophisticated travel requirements, while also protecting their USP of data, access and in-car experience. This will enable them to strengthen the relationship with the customer: the cornerstone of profitable growth. This will require active commitment from Automotive players to changing operational models and current processes, to focus on personalizing their offering to meet future demand.

Be prepared!

As public sector service providers will be impacted by the rise of personalization, a collaborative response is vital.

By Andrew Montgomery, Partner, Global Leader Government & Public Sector, BearingPoint

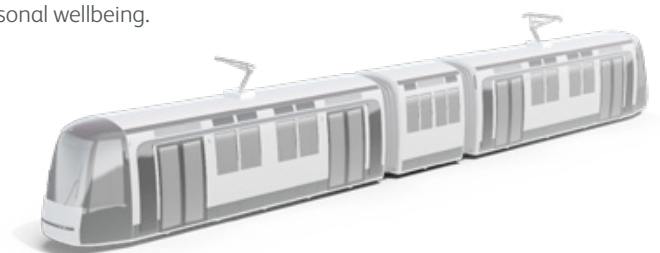
In the journey to 2030, consumers will be provided with more and more options to personalize their service and experience, regardless of the types of transportation they use.

We believe that for the “private vehicle experience”, people will move to consuming a service over ownership. Individuals will be able to create increasingly personalized experiences via premium pricing for additional levels of service, brand or vehicle. We also believe that the “mass transit experience” will be provided as a public service at lower or zero cost for the core service provision, in a shared personal space with other travelers, incorporating multiple modes, with integration across multiple platforms. Citizens will take advantage of reduced requirements to commute and being able to enjoy more leisure time by increasing the number of “personal wellbeing experiences” within their overall portfolio of journeys.

As citizens demand greater availability, quality, and flexibility from the mobility services that governments provide, whatever their preferred journey experience, how will the public sector need to respond?

We believe that the following are the key considerations for Government policymakers and service providers:

1. Public transportation must evolve to meet new citizen demand patterns.
2. Governments should ensure equal access to transport networks for all citizens.
3. The various modes of travel must be carefully integrated.
4. Safety and security of public transportation will remain a key priority.
5. Mobility policies should maximize national productivity and personal wellbeing.



Public sector dilemma



Governments should ensure equal access to transport networks for all citizens.

The solution provided by Future Mobility Framework

Inclusion of children with disabilities in school transport

Disabled children travel in adapted and individual school transports for which they did not have to present a ticket on board, unlike other children in nominal transport. Framing of a project to acquire a “light ticketing” system so that disabled children also have, like all children, to present a ticket to their driver.



The various modes of travel must be carefully integrated.

Development of a single multimodal ticket purchase service

Framing and monitoring of the implementation of a multimodal transport ticket purchase service in the regional mobile traveler information application.



Safe and secure public transportation should be maintained.

Strategic monitoring of the maintenance of the transport network

Framing and implementation of the maintenance doctrine and a digital environment shared between transport operators, infrastructure managers, and the transport authority to monitor the effectiveness of carrying out maintenance operations on buses, trams, trains and railway systems.



The mobility network must maximize national productivity and personal wellbeing.

Support for the development of carpooling in the context of reducing carbon emissions

Audit of the operation of carpooling operators to combat fraud against public subsidies paid for the development of carpooling services.

Public transportation must evolve to meet new citizen demand patterns

Before COVID-19, the demand for mobility services and journeys had been growing, as our economies and societies became more connected and integrated. The pandemic saw the volume of personal journeys fall significantly, in some sectors virtually to zero. The demand for some types of journey – particularly commuting and business travel – has been permanently reduced. However, the rebound in other areas has exceeded existing capacity, both directly and in terms of support services. One example is in relation to air travel, where a spike in demand for post-pandemic leisure travel exceeded the supply of aircraft capacity, and presented significant challenges in areas such as baggage handling and airport security.

Consumer decisions around what types of mobility to use are now more heavily weighted toward criteria like climate neutrality, personal safety and wellbeing, as well as digital connectivity. In addition, major global events – like wars or a reduction in energy supply – are impacting both the number and types of journeys. Many governments are making new policy decisions to influence demand, for example towards rail and away from intra-country flights. In order to meet the new patterns of demand, they will need to ensure that capacity exists across the mobility network.

Furthermore, governments will need to develop the required level of sophistication in their forecasting processes, data models, and IT systems to plan and react appropriately to predicted, unforeseen and actual changes in demand. This will include responding in real time to events such as network or service provider outages, unplanned traffic volumes, or a major weather event. This area presents opportunities for innovation, development, collaboration and entrepreneurship, at both the national and EU level.



According to EU statistics, 17 of the 20 busiest air routes in Europe cover distances of less than 434 miles, the sort of distances where intercity trains can offer faster, cleaner and more sustainable journeys.*



*Source: European Commission, Forbes

● Governments should ensure equal access to transport networks for all citizens

During and after the pandemic, changes in the patterns and locations of work and leisure have fundamentally changed citizens' requirements for mobility and transport. However, regardless of their location or destination – rural or urban – citizens are entitled to expect easy access to reliable, relatively frequent, and cost-effective solutions to meet their door-to-door travel needs. This is akin to logistics companies' commitments on delivery times, including those over “last mile” distances.

Equality of access is a key objective of the EU's Directorate-General for Mobility and Transport (DG MOVE), which stated that “transport should be sustainable, efficient, safe, affordable and accessible – for everyone.” The challenges are of course greater in more rural, lower density areas, but governments must launch more well-funded, public-private and innovative schemes to reduce this imbalance. And all these solutions all need to meet the requirements of citizens with specific mobility and accessibility needs.

● The various modes of travel must be carefully integrated

Effective mobility requires a coordinated ecosystem of public and private infrastructure and service provider. These should interoperate to enable seamless point-to-point journeys for citizens, and deliver a consistent and coherent in-person and digital customer experience. This will involve bringing together components such as ticketing systems, real-time route planning applications, physical signage, maps, and access to complementary services, content and information along the way.

There is a significant amount of innovation, new ideas and advances in technology across all elements of the overall mobility value chain. There is also clear convergence across each of the three core modes that we envisage towards a single transaction for the end-user. Governments must create and maintain an economic, technical and physical environment that enables multimodal integration. Effective procurement mechanisms and service level agreements will be essential, as will instruments that allow components or service providers to be swapped in and out as needed. Public sector agencies will also need to address the connectivity of these transport services to meet public demand, the changing workforce, and transportation financing.

Safety and security of public transportation will remain a key priority

Over the course of their journeys, citizens should enjoy a safe and secure environment across all the various modes of transport they may use. Indeed, at the EU level the objective that “high levels of transport safety and security are ensured and new security and safety challenges are addressed” is a strategic priority for Directorate-General for Mobility & Transport (DG MOVE). The existence of multi-modal transportation options in closer proximity, the range and volume of users and user needs, extension of hours during which mobility services are required and increases in new technologies such as eco-scooters and drones have placed increased demand on public service agencies responsible for transportation safety and security.

The need for safe and secure networks remains. There are also additional requirements for public service agencies to provide segregated physical infrastructure, such as roads, footpaths and cycleways, all with improved lighting and CCTV monitoring. Governments will need to mobilize and train more frontline transport police to improve and augment in-person policing and patrolling of public transportation, along with enhanced user education and technologies to discourage and penalize unsafe behaviors.

Local and national governments must define a clear strategy and the legislation to support these goals, along with the means of enforcement. They should also mitigate the safety risks inherent in autonomous vehicles by defining a regulatory framework for manufacturers and suppliers that includes checks and controls on the use of AI and other components in building self-driving software.

The mobility network must maximize national productivity and personal wellbeing

The time people spend traveling, whether for business or leisure, remains significant. It has the potential to be either productive and positive from a wellbeing perspective, or fragmented and stressful. However, improvements in transportation comfort, environmental awareness, and connectivity have increased the options for making this time useable and efficient for individuals, society and the economy.

Governments have a role to play in creating and maintaining this mobility environment as a positive space for citizens. Apart from benefiting from an efficient and well-integrated network, citizens should be given the opportunity to connect with entertainment and recreational facilities that promote individual wellbeing. And better transport links will make it easier for people to engage in activities such as eating out, shopping, banking, or undertaking educational or work-related activities.

Insurers of the future: act now!

How the rise of personalization will impact insurance and what you need to do now to make sure you're fit for the future.

By Giovanni Zucchelli, Partner, Global Leader Insurance, BearingPoint

In the journey to 2030, consumers will be provided with more and more options to individualize the transportation service and experience they receive.

They will be better able to choose when and how to travel, selecting from a range of options including electric vehicles (EVs), e-scooters, electric bicycles and autonomous vehicles (AVs). In fact, we see this happening already, with multiple modes of transport now available and multiple options to rent rather than to buy.

This shift will give rise to several changes:

1. The mobility transformation journey to 2030 is well underway.
2. There will be more B2B policyholders in the future.
3. B2C policies will become more personalized.
4. Risk profiles will diverge even more for different usage and regions.
5. There will be more products offering specialized EV and AV car insurance.



● The mobility transformation journey to 2030 is well underway

Insurers should start planning now for the personalized, sustainable, data-rich world of EV and AV transportation – by trialing new, more specialized policies that reflect the changes just around the corner. Equally, the change is reinforced by the European Parliament’s decision to reduce emissions. This establishes near interim emission reduction targets for 2030, requiring a reduction to 55% for cars and 50% for vans. Starting in 2035, new cars will be required to emit zero emissions.

As individuals enjoy more choice over their mobility options, insurers have the opportunity to get ahead by providing a greater choice of insurance products. Likewise, insurers must respond to the new legal situations and cover present developments.

● There will be more B2B policyholders in the future

As means of transportation become more of a shared commodity, insurers will see a fall in demand for individual car insurance policies, as fewer people choose to own and operate their own vehicles. Insurance products will therefore need to cater more to B2B and be designed for a higher number of variables.

With more people moving to renting and sharing vehicles, individual insurance policies will reduce in number, and business and fleet insurance policies will increase. Large-scale private providers of rented transportation will need insurance coverage for their fleets, to take account of the greater number of journeys in urban areas.

Rental insurance is nothing new, but it will adapt to offer the option of an extra fee to cover the deductible of car-sharing.

The overall value of individual premiums is unlikely to fall, and may even increase in some cases (as a result of the higher risk and higher costs for repair and maintenance, particularly that related to EVs and AVs). As EVs and AVs become more prevalent, we can expect to see insurance policies that specifically cover the unique risks associated with them. These risks are likely to include accidents caused by software malfunctions or cyberattacks, or flaws built into an AV’s systems by the OEM or its suppliers.

Consumer policies will become more personalized

As transportation becomes increasingly personalized, individuals will use a wider range of transport options, particularly in urban areas, where electric bikes, e-scooters, and EVs will all be available to rent as well as buy. User-centric software will begin to dominate mobility, deployed to gather data on individual driving habits and behavior.

For insurers, the user-centric software data will serve as the basis for customized insurance policies that better reflect the specific risks faced by each policyholder. This allows for more accurate pricing and more relevant coverage options for consumers. Insurers utilizing usage-based insurance (UBI) collect data from telematics devices or smartphones and will be able to track a policyholder's driving habits and behavior, such as distance traveled, location, time of day, and driving style.

Similar to UBI, pay-per-mile insurance uses telematics data to track a policyholder's mileage and charges them based on the distance they drive. This type of insurance can be particularly beneficial for low-mileage drivers, who often pay more for insurance than their vehicle use justifies. Consumers will expect lower premiums for policies that cover the risks relevant to their driving, and it will be important for insurers to get ahead of this shift.

A trend driving a change in risk levels is the rise of remote and hybrid working. It is likely that we will see less long-range business travel and more use of private mobility types. As we see greater flexibility in working locations, consumers may seek annual travel insurance products that also cover working remotely. This will include the impact of individuals working abroad and the implications for travel and health insurance.

An opportunity that arises out of automated data-gathering lies in offering predictive maintenance insurance – using the data from connected vehicles to predict when maintenance or repairs may be needed, and covering the costs associated with those repairs. This can help policyholders budget for repairs and reduce the risk of unexpected breakdowns. However, with a growing number of connected vehicles on the road, the risk of cyberattacks is likely to increase. By offering cybersecurity insurance, you can help protect policyholders against financial losses caused by cyberattacks on their vehicles.



Insurance data myth busters*

1. No data sets offer 100% currency or completeness.
2. All forms of Artificial Intelligence / Machine Learning depend upon reliable, trusted data.
3. Data for data's sake does not solve business problems.
4. Modelled data is just that – it may not reflect reality.
5. Cleansed, validated and normalised datasets, linked with a persistent unique key will provide greater business value.

*Source: BearingPoint observations from relevant Insurance clients' projects

Risk profiles will diverge even more for different usage and regions

Requirements for mobility services between urban and rural areas will continue to diverge, partly as a result of collecting sensor data. Urban, suburban, and rural populations have different mobility needs and options, and will therefore develop different risk profiles.

Mobility users' premiums may decrease as new technologies reduce the likelihood of accidents caused by human error, and as UBI and pay-per-mile insurance become more widespread.

Rural mobility users' premiums may not change as dramatically, because the technology may not be as widely adopted in rural areas and accident rates may not decrease as significantly.

However, insurance products may still shift to include coverage for damage caused by technology failures, and it may be that there are fewer public charging points in rural areas.

Nevertheless, rural and urban automobile users will have user profiles that differ from one another. With the possibility of working from anywhere, some will use their cars less due to having home offices, and others will work in a way that involves travel beyond their country of residence. Some factors that have an influence on premiums are not considered in a sufficiently differentiated way. Safe and responsible handling of the vehicle, as well as competencies in driving style, should be considered on an individual basis instead of through peer comparisons. Only by doing so can a realistic risk be personalized to the user.

There will be more products offering specialized EV and AV car insurance

We can expect to see a shift towards increased insurance premiums for EVs. This is due to generally higher maintenance and repair costs overall, although there are a number of risks associated with battery technology. The costs of repairing EV powertrains and batteries in case of damage are likely to be much higher than for combustion engine vehicles. There is the added cost of providing EV replacement vehicles if the EV is written off or during the period it takes to repair the damage, which is – on average – longer.

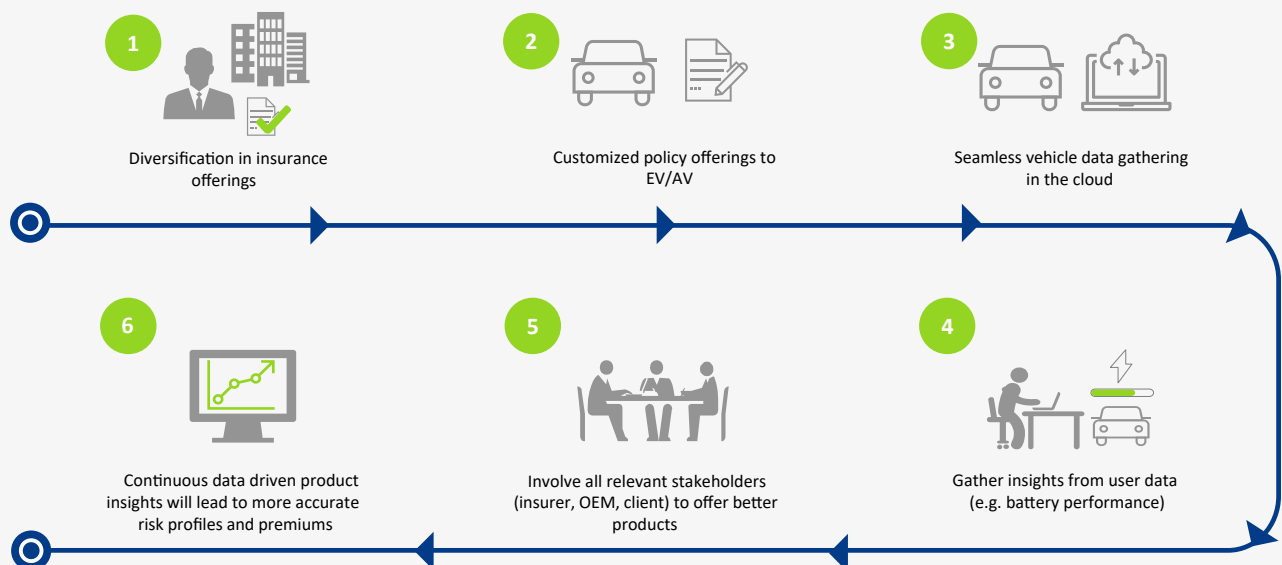
Insurers will also have to cover any damage to charging equipment, such as charging cords. As far as roadside assistance is concerned, the lack of charging points in certain areas may lead to additional roadside assistance needs for vehicles running out of power due to shorter than average ranges for EVs.

The increasing use of EVs creates new risks, the full extent of which has not yet been identified. Questions, such as which insurance will cover a fire caused by charging in one's own garage, will grow. With regard to the increasing risk and costs resulting from the fire of an EV, ways of covering this will have to be found. This also increases the question of what insurance coverage is needed and how insurers will provide it.

There are other, less common, risks to address. Coverage for damage caused by animals will need to be increased, due to the higher risk of damage from biting through cables caused by animals. Additionally, the range of policy coverage may need to focus more on damage caused by hackers or other technological failures.

Insurance companies need to respond to the changing market realities

Products and services will need to match each individual customer journey



Energize your mobility!

How the rise of personalization will impact transportation and energy service providers, and what you need to do now to prepare.

By Marion Schulte, Partner, Global Leader Utilities, Postal & Transportation, BearingPoint

In the journey to 2030, consumers will enjoy more options to individualize their transportation service and experience. They will be better able to choose when and how to travel, and by which routes, selecting from options that also include different types of mobility hubs.

This raises three essential questions for transportation and energy service providers:

- Who will provide future mobility?
- What are the differences between the various types mobility hubs?
- Who will be at the center of these mobility hubs?

In answering these questions, we explore the following key implications – and opportunities – for transportation and energy service providers:

- 1. New infrastructure, services and relationships will be needed to deliver multimodal journeys.
- 2. There will be two main types of mobility hub – car-focused and rural intermodal transport hubs.
- 3. Providers will have to work in a more user-centered and agile way.
- 4. Utility companies will have a new role to play..
- 5. ...and so will public transportation organizations.



There will be two main types of mobility hub – car-focused and rural intermodal transport hubs

From our perspective, it is unclear who is likely to emerge as the favorite future provider of car-focused mobility hubs – oil and gas companies like BP and TotalEnergies, energy utilities like EDF and E.ON, or service station providers such as Tank & Rast and Autogrill.

These providers will compete for the best sites, ones that attract the highest number of potential users and offer the greatest speed and convenience. But with the most lucrative sites being principally in urban areas, there may be a dearth of charging sites and mobility hubs in the country. Providers will tend to build and operate sites in rural areas only when encouraged by subsidies or forced to do so by state intervention.

One main type of mobility hubs will be car-focused hubs.

Some of these car-focused hubs will have the clear focus on charging or fueling the user's car as fast as possible, and provide the user with services to use the charging time most efficiently. This kind of hub will be sited in service stations and offer high-performance electric charging points and basic added services, including car-related services, groceries and drugstores for basics and convenience products, public Wi-Fi, conferencing facilities, and restrooms. Other car-focused hubs will be located at sites like supermarkets and shopping malls. The main customer goal there is shopping, and charging their car will be an incidental hygiene factor. All car-focused mobility hubs have in common, that there is no intermodal mobility offering.

But it is to be observed that this is a competitive field, as oil and gas companies are entering the CPO and eMSP market at their gas station networks.

There is a clear risk for energy companies in competing with oil and gas companies for car-based mobility hubs if they are offering only sustainable mobility, such as electric or hydrogen power. The reason is that oil and gas companies will offer not only sustainable mobility services but also petrol there and thus have – at least for a few more years – a much broader customer base. However, there may come a time when carbon-based fuels are superfluous, and selling petrol on forecourts will no longer be a viable business model for oil companies.

The second main type of mobility hub will be rural intermodal transport hubs.

These hubs are integrated travel interchanges that enable citizens of rural areas to transfer between different transportation modes, and offer support services like charging points and food trucks. They will often be located close to bus and railway stations, and offer intermodal mobility - similar to the service offering already established at large railway stations in major cities.

As to rural intermodal transport hubs, the strategy of many cities is to control traffic by reducing parking spaces and increasing parking costs.

City taxes, congestion charges and entry or emissions-related driving restrictions such as Umweltplakette in Germany, the congestion charge in the UK, and France’s Crit’Air will become increasingly prevalent. For these reasons, people will rarely go into major cities in their own car, either because it is prohibited or too expensive, and are more likely to travel to a rural hub – whether by walking, cycling, micro mobility or car-share –and then continue into the city by public transportation. This could make rural stations more attractive to service providers by upgrading them to popular intermodal mobility hubs.

In parallel, public transportation providers will need to develop new services to support multimodal travel, for example, luggage transportation for multimodal long-distance travel and on-demand transportation in rural areas. Some existing facilities will need to be extended, such as bike storage on trains, thereby encouraging the use of low-carbon options.

New digital infrastructure, such as mobility as a service (MaaS) platforms, will also play an important role. MaaS platforms can connect all stakeholders – public transportation providers, car sharing and rental companies, ChargePoint operators, e-mobility service providers, and many others – to facilitate citizens’ personalized journeys.



**Where will you be adding value?
The future complexity of transport and utilities service offerings.**

	Urban public transport	Regional public transport	Long distance transport	Sharing (car, bike, scooter)	Carpooling	Taxi, VTC, etc.	Parking
Route search							
Real time information							
Online shopping mobile validation							
Subscription (multi-modal fare)							

**Source: BearingPoint methodology based on client engagements*

Providers will have to work in a more user-centered and agile way

We see cross-industry partnerships and partner management – based on agility and the capacity to manage interfaces – as an essential skill, enabling providers to be both user-centric and partner-centric. Managing interfaces successfully means providing an individualized multimodal customer experience in the larger hubs and facilitating sustainable mobility.

This requires a focus on scalability, quality, and speed of processes. Providers will need to think big and think digital, and use data to make decisions like identifying the best and most attractive way to create mobility hubs, and for offering the most attractive portfolio of services there. In doing this, they should use the means of digitization that are already available, such as predictive software, AI, data analytics, and individualized user interfaces.

Providers will have opportunities to generate new revenue streams from partners and end users for personalized additional services. For example, this could involve offering “premium, super-green electricity” at the charging-point – analogous to premium versus standard petrol – or promotions like “charge your car here and get a €1 discount in the shop”.

By increasing customer interaction, providers will be able to increase sales, reduce operational and maintenance costs, and improve quality – for example, by enabling customers to report technical issues such as defects with apps or QR codes.

Utility companies will have a new role to play...

The utilities’ role in personalized mobility and the provision of mobility hubs holds several possibilities. They can be the technical enabler for future mobility solutions and hubs, providing low-carbon electricity and managing the network balance – through electricity production and facilities like smart grids, smart charging, V2X-services, and tariff differentiation. In addition, they can also act as an infrastructure operator – including operating charging points and hydrogen (H2) filling stations – offering flexible pricing and billing for their charging services.

Utility companies will also be able to provide various personalized energy-related services in mobility ecosystems. They can manage EV charging and install and maintain facilities offering vehicle-to-grid (V2G), vehicle-to-home (V2H), photovoltaics, and battery storage services. They will also be able to offer load-variable electricity tariffs and provide vehicle-based mobility services, such as car-sharing or e-scooters.

These activities should place utility companies at the center of mobility interfaces – either with direct access to end customers or as a B2B service provider for OEMs or big tech companies.

... and so will public transportation companies

Public transportation companies' future role depends on transforming railway and bus stations into urban and rural mobility hubs, aggregating all the mobility services and facilitating the interface with owned vehicles.

They can offer a new approach to the classic train journey in order to revitalize minor train lines by offering more services at controlled costs, such as SNCF's "train léger innovant". And they can invent new mobility solutions to renew low-traffic lines, as SNCF have done with the Draisie and Flexy projects, and develop new travel concepts in rural areas.

They can act as a platform provider for the search, reservation and booking of low-carbon multimodal journeys. They can also offer on-demand services that incorporate customer-dependent schedules – using, say, robo-taxis or on-call buses – and integrate services with connections to small manned EVs.

New infrastructure, services and relationships will be needed to deliver multimodal journeys

Transportation and energy service providers will need to create new infrastructure, services and relationships to deliver the multimodal journeys of the future. They will focus on integrated mobility hubs, which enable citizens to personalize their journeys using and connecting options like electric cars, micro-mobility services and public transport.

These may be located in sites mainly geared towards cars and EVs, like service stations, or those specializing in public transportation, such as railway hubs – not only in urban but also in rural areas. All providers will have to work in a more user-centered, sustainable and agile way, collaborating with partners to meet customers' increasingly sophisticated travel needs.

Where, when and who to play with?

How the rise of personalization will impact oil and gas companies – and what you need to do now to prepare.

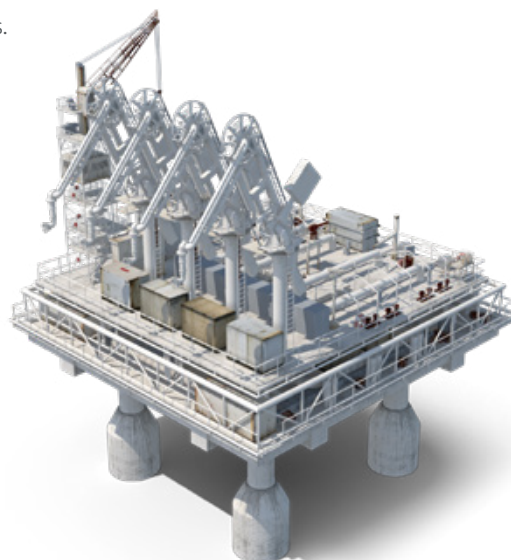
By Jens Raschke, Partner, Global Leader Resources, BearingPoint

In the journey to 2030, consumers will be better able to choose when and how they travel, and by which routes, selecting from options that include mobility hubs offering electric vehicles (EVs) and public transportation like railways and buses.

This raises two essential questions for oil and gas (O&G) companies: who will provide future mobility, and who will be at the center of the mobility hubs?

In answering these questions, we explore the following key activities that will inform O&G companies' role in the personalized journey, as fuel producers and distributors:

1. **Develop** the industry's extensive travel infrastructure.
2. **Acquire, analyze and exploit** customer data from many digital sources.
3. **Match** mobility hubs and services to specific locations.
4. **React** sustainably to changing travel patterns.
5. **Prepare** for the new worlds of clean fuel and autonomous driving.



Develop the industry’s extensive travel infrastructure

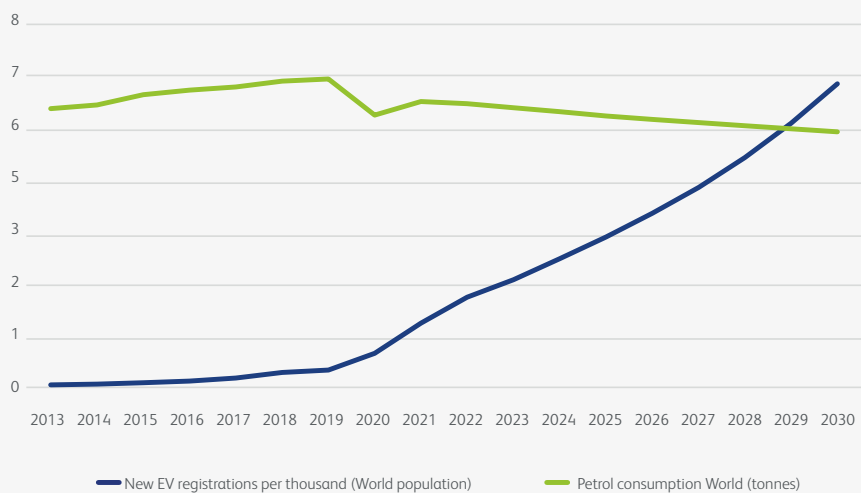
We believe there will be a rise in individually determined, multimodal journeys, with many individuals preferring to use small manned EVs – such as e-scooters and microcars – for their daily commute. These will be integrated with on-demand services, using vehicles like robo-taxis and on-call buses. The O&G industry does not believe in a “one-size-fits-all” ideology, and will take a pragmatic approach to supporting this kind of individual mobility.

O&G companies are well-placed to capitalize on their central role in current travel infrastructure, principally their existing portfolio of fuel stations. They will be able to adapt these locations into mobility hubs with individual offerings, such as BP’s multimodal stations in Berlin¹, to provide e-charging infrastructure. The O&G sector will also be able to develop new hubs with a variety of low-carbon energy sources like liquefied petroleum gas (LPG) and hydrogen, as well as providing electricity for EVs. They can grasp this opportunity to expedite their transition to clean energy in both production and distribution.



Global petrol consumption has been falling since the pandemic while new EV registrations are expected to continue to rise as the decade continues?

New EV registrations per thousand population (world) vs Petrol consumption tonnes ('000) (world)



¹ <https://www.bp.com/en/global/corporate/careers/life-at-bp/our-stories/aral-opens-berlin-mobility-hub.html>

Acquire, analyze and exploit customer data from many digital sources

Fuel stations' role in the transportation infrastructure accords O&G companies enormous potential for getting to know their customers better, with a view to upselling, cross-selling and developing new products and services.

They will be able to gather data on user preferences and behavior from a variety of sources, including digital fuel cards (or "energy cards"), payment services using a digitized on-board unit (OBU), and license plate recognition. Based on the data accumulated from these sources, they will be able to deploy user-centric software to offer their customers individual mobility opportunities or special deals like a free coffee when filling up or charging before 8.00am.

These connections will establish a substantial interface between O&G companies and customers, B2B as well as B2C. Firms will be able to create software or front-ends that provide B2B customers with facilities like a total cost of ownership (TCO) calculator or cost optimization. Rental cars, for example, will be able to take on as much fuel as necessary using automatic payment software, while fleet customers can be offered rebate models based on their fueling history.

The increase in the quantity and quality of data will encourage new business models, always allowing for each country's data privacy regulations. There will also be some reliance on political decisions and local circumstances – often dependent on the maturity of markets and regional politics.

Match mobility hubs and services to specific locations

The mobility choice within cities will be increasingly heterogeneous, with the majority of urban commuters preferring micromobility over cars. By contrast, many rural residents will continue to use cars as the dominant option or seek high-speed transport to cities.

Based on the different demands of energy types and mobility models, as well as regulatory variations, O&G companies must be able to differentiate between rural and urban areas. For example, they will be able to tailor each hub's e-charging resources according to the volume of EVs and home- and street-based charging stations in that location. These requirements will evolve as, for example, the growth in urban high-power charging-points drastically reduces the need for private chargers in towns and cities.

The increased use of EVs and alternative fuel vehicles in both urban and rural areas will also encourage the O&G sector to develop new energy storage solutions and alternative fuel sources, such as biofuels and hydrogen fuel cells.

O&G companies will be an important source of energy supply in rural areas, building new infrastructure on highways and main roads, along with more technology and service provision. This will open up opportunities for oil companies to improve access to transportation and reduce isolation in rural areas, while providing service to people who cannot afford individual mobility.

In urban areas, the focus will be on reducing congestion, improving air quality, and increasing the efficiency of transportation systems, which may involve the implementation of more advanced technologies such as autonomous vehicles and smart transportation systems.

Innovation will happen more in smart cities and other urban locations, given the higher funding and scaling potential. As EVs become more prevalent, there will be a greater demand for more efficient and longer-lasting batteries, which will drive R&D in the field of battery technology. The general focus on sustainability will stimulate research into developing more eco-friendly materials and recycling existing ones.

Future EV Charge Hubs +

Alliances provide the traveller with a wide variety of retail and automotive services

Leading German utility companies are already positioning themselves as leaders in e-mobility. They have gained experience in planning, building and operating AC- and DC-chargers at supermarkets, pharmacies and DIY-stores across Germany. This experience has enabled these operators to start to build larger hubs with high performance 300kW chargers along motorways. Utilities companies have already forged alliances with retailers and other players in the automotive services industry. They are meeting their customers' needs by combining their offerings. For example, at these charging hubs they are also providing fully automated unmanned grocery stores, public Wi-Fi and the usual amenities that a long distance traveller would require. We believe that in the future, these value added charging hubs will be widespread across the continent and drive further EV adoption.

BearingPoint is supporting the design, implementation and optimisation of all relevant processes, as well as the rollout of the extended service offering.

React sustainably to changing travel patterns

Advances in technology, such as telecommuting, video conferencing, and online shopping may reduce the need for people to travel for work. Socioeconomic changes, such as cost-of-living rises, an ageing population, and a shift towards more localized consumption, may also lead to a decrease in overall mobility. Governments and organizations are increasingly looking at ways to reduce carbon emissions and improve air quality, which may lead to policies and initiatives aimed at reducing vehicle usage, such as congestion charging and incentives for using public transportation.

To reduce carbon emissions and improve air quality, O&G companies are investing in biofuel production, exploring sources such as algae, rapeseed oil, and animal waste like beef suet. They are also developing alternative materials and chemicals to be used in building EVs and new travel infrastructure, such as bioplastics containing bio-based polymers and non-toxic chemicals that meet the European Commission's Chemicals Strategy for Sustainability.²

² <https://www.rsc.org/globalassets/22-new-perspectives/sustainability/a-chemicals-strategy-for-a-sustainable-chemicals-revolution/eu---chemical-strategy-for-sustainability.pdf>

Prepare for the new worlds of clean fuel and autonomous driving

Given that the transition from manual to autonomous vehicles will be slow, the mobility picture will consist of both self-driving and automated driving for some time. Different powertrain technologies will also continue to coexist, principally combustion engines – using petrol, diesel, biofuels, LPG, compressed natural gas (CNG), synthetic fuels, etc – alongside fuel cell and battery EVs, the latter using various battery and charging technologies like lithium ion and redox-flow.

This is because individual consumers have a variety of needs and preferences when it comes to transportation, while different regions and countries have their own specific regulations and emission standards, along with different infrastructure and charging networks.

O&G companies' profit margins may decrease because of their R&D and infrastructure investments, the bigger players providing bigger hubs and meeting customers' demands for all-in-one solutions and payments.

Smaller and medium-sized gas stations will struggle to integrate the many different powertrain types into their supply chains. And as the complexity and diversity of operations increases, there are likely to be consolidations and partnerships in the market, with growing cooperation between all players to guarantee energy supply to citizens.

O&G companies' future role

O&G companies will be able to exploit their fuel stations' central role in the existing travel infrastructure, particularly in developing many of them into extensive mobility hubs. They must also become adept at sourcing alternative energies – such as biofuels and hydrogen – as they gradually phase out fossil fuels.

O&G companies will be able to use their presence in commercial fueling and e-charging to acquire high-quality customer data, capitalizing on this information to offer their users targeted products and services. Following this strategy, they will be well-placed to benefit from the growth in EVs and other aspects of individual mobility as leading producers and distributors of clean energy for individual travel.

• Conclusion: •

the unstoppable rise of personalized mobility

In Europe by 2030, public transportation providers will increasingly make mobility an experience that is customized around the individual. The growth of this personalized mobility experience will impact all segments. The question of who owns the customer will be the key competitive battleground.

As individuals control their own travel experiences this will impact our relationship with various brands, weakening personal ownership of vehicles and the era of OEMs owning the customer. This will have a knock-on impact on all players in the current personal transport market.

The new mobility model will be driven by the fact the primary relationship of the customer is with their platform provider. This means a new era of alliance, eco systems, new products and new services as well as new regulations.

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About BearingPoint

BearingPoint is an independent management and technology consultancy with European roots and a global reach. The company operates in three business units: Consulting, Products, and Capital. Consulting covers the advisory business with a clear focus on selected business areas. Products provides IP-driven digital assets and managed services for business-critical processes. Capital delivers M&A and transaction services.

BearingPoint's clients include many of the world's leading companies and organizations. The firm has a global consulting network with more than 13,000 people and supports clients in over 70 countries, engaging with them to achieve measurable and sustainable success.

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